REMARKS

Claims 1-27 are pending in the application. Independent claims 1, 12, 13, 19, and 25 have been amended herein. Claim 28 has been added herein. Favorable reconsideration of the application, as amended, is respectfully requested.

I.   REJECTIONS OF CLAIMS 1-27 UNDER 35 U.S.C. § 103

Claims 1-11, and 13-27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over a combination of Data-Over-Cable Service Interface Specifications ("DOCSIS") and U.S. Patent No. 5,939,887 ("Schmidt"). Claim 12 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over a combination of DOCSIS, Schmidt, and U.S. Patent No. 6,772,437 ("Cooper"). Applicants believe that all pending claims are allowable for at least the following reasons. Withdrawal of the rejections is respectfully requested.

One of the features recited in independent claims 1, 12, 13, 19, and 25 is related to testing a cable network using one or more test frequencies. Independent claims 1, 12, 13, 19, and 25 have been amended herein to further clarify one aspect of the invention. Specifically, independent claim 1 now recites, *inter alia*,

"(b)   instructing a first one of the one or more cable modems

(i) to send a first test signal of a first frequency at a first power during a first one of the time increments, and

(ii) to send the first test signal while the first cable modem is on line and engaged in live data transmission at the original frequency; ...

(d)   instructing the first cable modem

(i) to send a second test signal of a second frequency during an available time increment, and

(ii) to send the second test signal while the first cable modem is on line and engaged in live data transmission at the original frequency."

Other independent claims contain recitations similar to those of claim 1. All of the limitations recited in claims 1, 12, 13, 19, and 25 are described throughout the present specification (some pertinent discussion is found at page 14, line 21-34 and page 2, line 33 to page 3, line 16). Thus, no new matter has been introduced by the claim amendments.

The Examiner asserts in his Response to Arguments that the claimed instructing steps (executed by, e.g., a CMTS as set forth in Applicants' previous amendment) are interpreted to take place while the modems are engaged in live traffic at the original frequency. In other words, the Office still interprets the "while" clause as directly modifying the verb "instructing." This is not what is intended. Rather it is intended that the instructions from, e.g., a CMTS, cause a cable modem to send test signals while that cable modem is also engaged in live data traffic. In

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order to avoid the interpretation currently used by the Examiner, independent claim 1 has been amended to recite, for example, that the cable modem is instructed not only to send a first test signal but "to send the first test signal *while the first cable modem is on line and engaged in live data transmission at the original frequency.*" Consequently, sending the first test signal takes place while the first cable modem is engaged in live data transmission at the original frequency. Therefore, contrary to the Examiner's assertion, current claim language does not allow the Examiner's interpretation asserted in the last Action.

The Examiner further asserts in his Response to Arguments that the modem does not transmit a test signal while engaged in live data traffic at the original frequency. However, as appreciated by those skilled in the art, sending a test signal at a frequency different from the original frequency does not necessarily mean that it ceases to perform live data transmission.

As described in the present specification, one of the example embodiments interleaves the testing at a test frequency and normal data communications at the original frequency. In other words, deviation from the original frequency is merely temporary, and thus, the testing modem promptly returns to the original frequency for continuing effective live data transmission. The benefit being that testing can be conducted without departing from live data traffic mode. This is fully explained in the specification, including the background section and the beginning of the summary section. As specified in various claims (and explained clearly in the specification), testing during live data traffic mode may result when a CMTS identifies certain time slots available to the cable modem that are not currently scheduled for data transmission. Those slots are both (1) within the time domain of live data traffic, and (ii) used to transmit test signals. All existing independent claims 1, 12, 13, 19, and 24 are related to this feature, and new dependent claim 28 also recites this interleaving.

In summary, Applicants find nothing in the cited art that suggests the claimed modes of testing while live data transmission is on-going. Therefore it is respectfully submitted that the invention defined in independent claims 1, 12, 13, 19, and 25, and their dependent claims, is patentable over the cited art. Withdrawal of the rejections is respectfully requested.
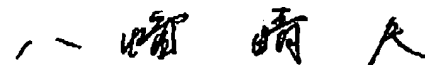
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II. CONCLUSION

Applicants believe that all pending claims are in condition for allowance, and respectfully request a Notice of Allowance at an early date. If the Examiner has any continuing concerns about patentability of the claimed invention, he is encouraged to telephone the undersigned at 510-663-1100, ext 245.

Respectfully submitted,
BEYER WEAVER & THOMAS, LLP

Haruo Yawata
Limited Recognition No. L0109

P.O. Box 70250
Oakland, CA 94612-0250
510-663-1100, ext. 245

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